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ABSTRACT

The effectiveness of the CIRCUS language instruments for determining language comprehension and performance in the 4- and 5-year-old child is discussed. In these instruments, the use of content words is primarily studied through the use of single-word measures, such as a picture vocabulary test and an auditory discrimination test, whereas the use of functor words is studied by three different measures: a listening comprehension test, a test which measures the receptive understanding of certain grammatical constructions, and a test which measures the ability of the child to produce the same or similar constructions. These last two measures are designed to provide information which can be used to compare the child's receptive vs. productive use of grammatical structures. The intent of the CIRCUS measures is to provide the teacher with a reasonable sampling of the child's language. The CIRCUS instruments measure the growth of the child's spoken language by observing three types of language use: descriptive, functional, and narrative. (DB)nd

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# LANGUAGE COMPREHENSION AND PERFORMANCE

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It has been suggested that one of the purposes of assessment is to "make the child visible." In the study of language comprehension and performance in very young children, the problem of how to increase visibility requires us to both widen our angle of vision and to sharpen the focus of view. We need to not only look at a larger variety of behaviors but also to obtain enough instances of a particular behavior so that it can be seen clearly. At the same time, it is important to develop this visibility in ways which would be helpful to those working with children in an educational setting. The selection of the particular ways of looking at child language thus should be based on those elements which can be assessed in the usual classroom context and which have some basis in the research literature as being important in the development of language in children.

Much of the work in the development of the language measures used in the CIRCUS collection was based on prior experience with similar measures in various research studies conducted at Educational Testing Service (e.g., Early Education Group and Head Start Longitudinal Project studies). These earlier measures in turn incorporated and adapted a number of ideas and item types used by other researchers, and we are greatly in their debt.

For example, within the theoretical context of looking at language development, Carroll (1964) has suggested that there are two main classes of functions

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of language:

(1) as a system of responses by which individuals communicate with each other (inter-individual communication) and

(2) as a system of responses that facilitates thinking and action for the individual (intra-individual communication).

As part of an earlier ETS study, Shipman and Bussis (1968) suggested that these two functions may be identified from a linguistic point of view, and that different word classes included in the grammatical structures of the child's speech may be identified with these functions. In their analysis, the group of words called content words is primarily used for communication between people whereas the group of words called functor words is responsible for facilitating thinking. The content words (i.e., nouns, verbs, adjectives) carry most of the communication load so that a child's statement such as "Mommy, cooky" can be understood as "Mommy, please give me a cooky." The functor class of words, which comprises only about one percent of the total vocabulary, consists of auxiliaries, prepositions, articles, pronouns, conjunctions, and inflections. Although functor words convey little information in and of themselves, they are the conveyors of meaning which accrues to them in context.

This research interest in the development of words in both content and functor classes is represented in the CIRCUS language instruments. The use of content words is primarily studied through the use of single-word measures such as a picture vocabulary test and an auditory discrimination test.

whereas the use of functor words is studied by three different measures: a listening comprehension test, a test which measures the receptive understanding of certain grammatical constructions, and a test which measures the ability of the child to produce the same or similar constructions. These last two measures are designed to provide information which can be used to compare the child's receptive vs. productive use of grammatical structures.

The intent of the CIRCUS measures is to provide the teacher of the 4- and 5-year-old child with a reasonable sampling of the child's language. The word "reasonable" is used quite deliberately, and it applies in a number of different contexts. We must all agree that the best sample of language in terms of range, content and adequacy would be that obtained by the continued and careful observation of the child by a sensitive observer over a long period of time. A reasonable sampling must however be limited to that which can be done by a relatively untrained observer in an appropriate period of time under realistic classroom conditions. We would also agree that there are a number of research directions which are provocative in terms of developing an understanding of the child's language, but a reasonable approach would be to select those which appear to be most closely related to the educational goals of the teacher in the classroom.

The use of the word "reasonable" in a more positive sense requires that we provide as large and adequate sampling of the child's language as is possible under the constraints of a standardized assessment situation. That is,

in contrast to many so-called readiness measures, it is our feeling that if a particular language behavior is important enough to measure, there should be enough instances of that behavior so that one can look at it carefully. For example, if the ability to listen is an important area to observe, then there should be more than one way to assess this area, and the number of items on each type of listening behavior should be sufficient for the teacher to gain some instructional input from an analysis of the items.

The growth of listening skills may be considered as the construction of a sound-symbol system in which the spoken word is associated with a representation, either internalized (e.g., imagery) or externalized (e.g., object or picture). In the CIRCUS instruments, the development of this system is monitored through the use of separate measures which assess various abilities such as connecting sounds with pictures (e.g., child recognizes a picture of a bell upon hearing the sound of a bell on tape), discriminating sounds within words (i.e., auditory discrimination), understanding words connected together as in stories (i.e., listening comprehension), and coping with the linguistic use of language (e.g., use of inflections, prepositions, etc.). Thus, instead of a global score on listening comprehension or a readiness score based on a collection of a few items from each of the above categories, the teacher is provided with information which would be useful in an instructional program. That is, instead of finding that half of a class is "not ready" for reading, the teacher has some indication of the kinds of items which are difficult for a particular child or group of children.

In addition to increasing the amount of informational feedback to the teacher, the development of items also has involved a concern for the kind of feedback available. One kind of feedback which would be helpful is to enable the teacher to make more productive use of the wrong answers given by the children. Whenever possible, the distractors used in the test items were carefully designed so that the teacher could analyze the wrong answers to help her plan her instructional program. If an item required the use of several elements to be correct such as, "Clarence Clown had a big nose and a smiling mouth. Mark Clarence," the distractors had different elements which would be incorrect (e.g., a clown with a big nose and frowning mouth or a clown with a smiling mouth and a little nose). Again, if an item required the child to attend to a sequence of directions, the design of the distractors would help a teacher to see whether there is a consistent tendency for the child to listen to either the beginning or the ending part of a phrase. This philosophy of a testing/teaching approach to test development has had an earlier history at ETS with the ETS Cooperative Primary Tests, and it has been a very rewarding experience to provide teachers with ways in which to use such information as part of their instructional program.

Time does not permit a full discussion of each of these listening measures but the use of picture vocabulary tests is so common that it warrants some thoughtful consideration on the part of test developers. Perhaps more than in any other type of measure, the assessment of the child's vocabulary through the use of pictures must be viewed as a hazardous undertaking. If we agree that words are symbols or abstractions which represent concepts, we see that

in a simple sentence such as, "I am a researcher," every word represents a concept. The use of a picture vocabulary test thus incorporates the folly of trying to measure the concept of a class or category with a single instance of that category. That is, we are trying to measure whether a child understands the concept of "dog" with a picture of a single, particular dog. In a sense, this procedure violates the developmental notion of label acquisition in which we assume that the child learns to abstract the concept of "dog" from a variety of instances. That is, that the wider the representation of instances (e.g., the number of kinds of dogs), the broader and more generalizable is the child's concept of "dog." The assumption of the picture vocabulary test is that the child chooses the correct drawing as a categorical response. The hazards of this assumption are clear: one child may get the correct answer simply because the pictured dog closely approximates the only dog he knows rather than because he knows a large number of dogs and is able to generalize to the class of "dogs."

It is apparent that the future development of picture vocabulary tests should be concerned with some resolution of this problem. One approach may be to provide as many "drawable" examples of the target word as possible. The child's task would then be to identify these examples out of a set of non-exemplars. Such a procedure would provide information on the breadth of the child's knowledge of a particular word rather than on whether he happens to recognize one specific version. For the present, however, our work with the CIRCUS vocabulary measure represents an attempt to correct a problem which is common in many of the picture vocabulary tests used for this age range. Quite often, the items in such tests only measure the child's global understanding of a word. Thus, the distractors have little or no relationship to the target word, and the child only needs a vague

association with the required word in order to eliminate the wrong answers. In the development of the items in the CIRCUS vocabulary test, there was a deliberate focus on the careful use of distractors which would measure the preciseness of the child's understanding, e.g., if the stimulus word was "log," the item included drawings of a piece of lumber and a tree as well as a log.

In contrast to receptive language measures, the real world of language development is to be found by listening to children. If we were to walk into a room full of 4- or 5-year-old children, our main impression would be an awareness of the hum or chattering of children's voices. There is a tremendous amount of talking going on--some of it may be elicited by the adult, but much of the language is spontaneous. Here, then, is the real world of oral language in the young child. This is where he learns to use language to deal with his world in all its complexity. He learns to ask questions, to get help, to imitate, to role play, to order other children around, to say, "Hey! Look at me!"

We agree that this real world of language performance cannot possibly be fully explored through the use of any prescribed set of standardized measures. At the same time, there is a need to provide some way of helping the teacher to sample the richness of the child's oral language. The CIRCUS instruments measure the growth of the child's spoken language by observing three types of language use:

(1) The descriptive use of language: The child is handed a common object and is asked to describe it. One item elicits the child's use of categorical language such as asking for various attributes (e.g., "What color is it?"). Another merely asks him to "Tell me all about that."

(2) The functional use of language: The child is shown a number of pairs of drawings. A statement is made about one of the pictures and the child is asked to complete the statement which applies to the other picture (e.g., "Here is a boat. Here are two _____."). There are more than 40 items dealing with such things as the use of plurals, verb tenses, prepositions, subject-verb agreement, comparatives, possessives, etc.

(3) The narrative use of language: The child is shown a large colored drawing and is told that it is a picture out of a storybook, but that "I don't have the story that was in the book, so I want you to make up a story to go with this picture. What do you think the story was about?"

There are two items and the child's story for each picture is taken down verbatim. Each story is scored for both quantitative and qualitative dimensions. The quantitative scoring includes the more traditional measures of the number of words and the number of different words. The qualitative scoring measures the use of elements such as action, imagery, affect, characterization and organization (i.e., "storyness"). It is unfortunate that the use of written protocals prohibits the observation of some of the richest elements of the child's oral language. Much of the effectiveness of a young child's communication is apparent in his use of such elements as intonation, pacing and volume (loudness), as well as the important non-vocal elements of facial expression, gesture and body language. However, it is our hope that by providing the teacher with information on the qualitative elements of the written version of a child's story, she will become more

aware of the complexity of the child's use of language for communication.

A number of other researchers have focused on the comparison between the child's receptive vs. productive use of language and have found that the child can understand a much larger number of words than he can use in his own speech. In contrast to receptive language measures which require a child to select from a limited number of responses, the measurement of productive language is complicated by the fact that the variety of responses is limited only to the extent of the child's oral vocabulary and the child's ingenuity in its use. The authors' research with the Story Sequence Task in the ETS Head Start Longitudinal Study has supplied additional evidence that the young child is quite capable of understanding the meaning of a word used in a story although he cannot recall the exact word in his retelling of the story. For example, one of the stories included a statement that Mr. Turtle visited his friend Mr. Pig. In the subsequent coding of the children's version of the statement, we found that there were some 8-9 acceptable ways in which the meaning of the word "visited" was communicated: e.g., "he went over to get," "he asked him to come over," "he went to play with," etc.

This same type of ability to understand the intent of a communication combined with an ingenuity in the use of the child's own language is also apparent in the children's response to the CIRCUS productive language measures. In the measure of functional use of language, many of the responses showed that the children clearly understood the task but were managing it in their own language. For example, in one of the items on verb tenses,

the teacher pointed to each of two drawings of monkeys and said, "This monkey ate his banana. This monkey is still _____." Back came the responses such as, "This monkey is still not finished," "This monkey is still hungry," "This monkey is still chewing," "This monkey is still holding his banana," etc. As you might expect, we were torn between delight and chagrin. The result of this experience is that we now have a tremendous respect, both for the young child's command of his language and for the coding problems of researchers who have been working in this field.

The development of language measures which provide as much visibility as possible is particularly critical because many educational decisions regarding the child are based on competency in this area. The measures discussed in this paper represent our attempt to translate the current state of the art of language assessment into instruments which will provide useful information to educators and researchers working with young children.

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August, 1973

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